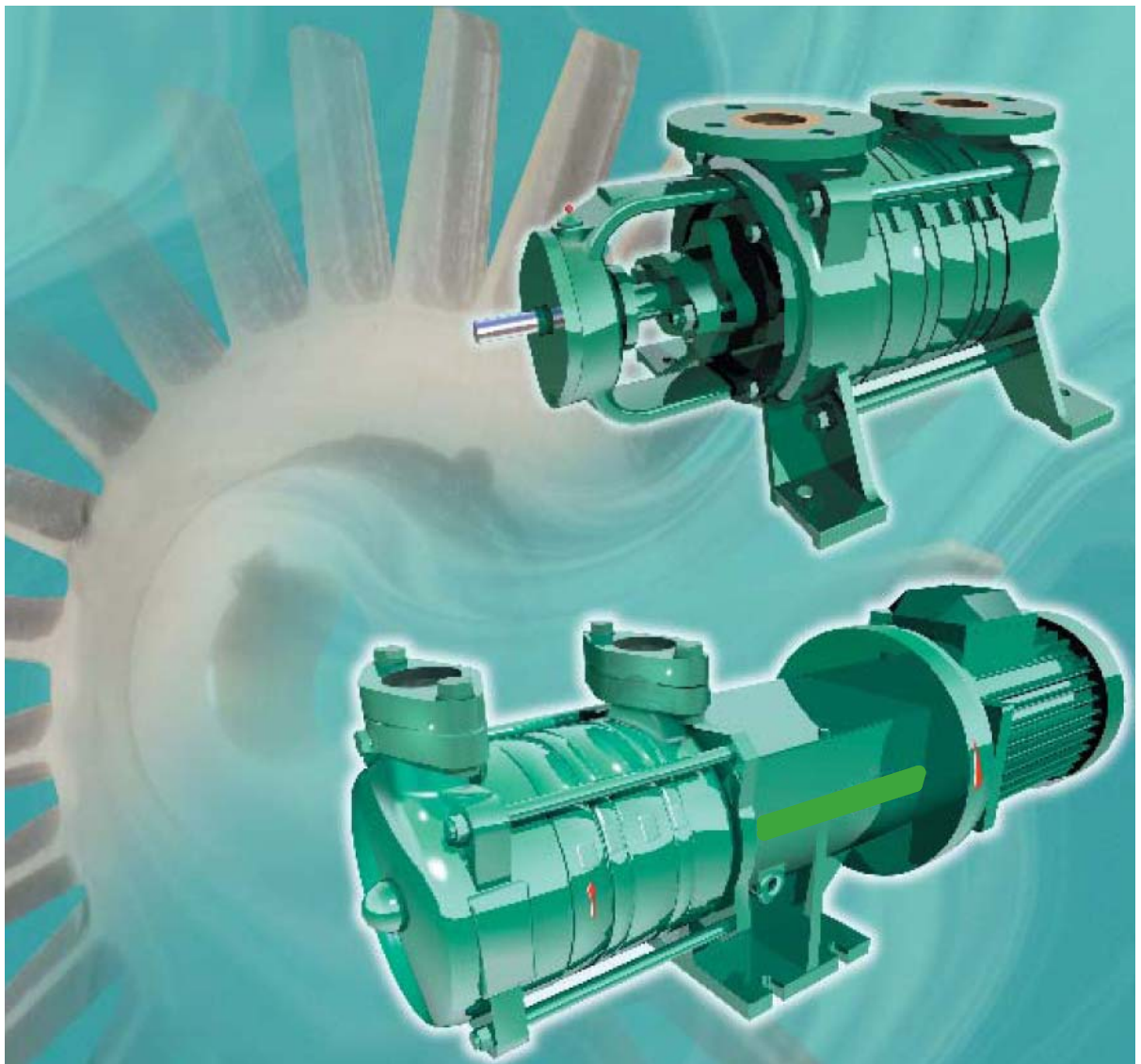
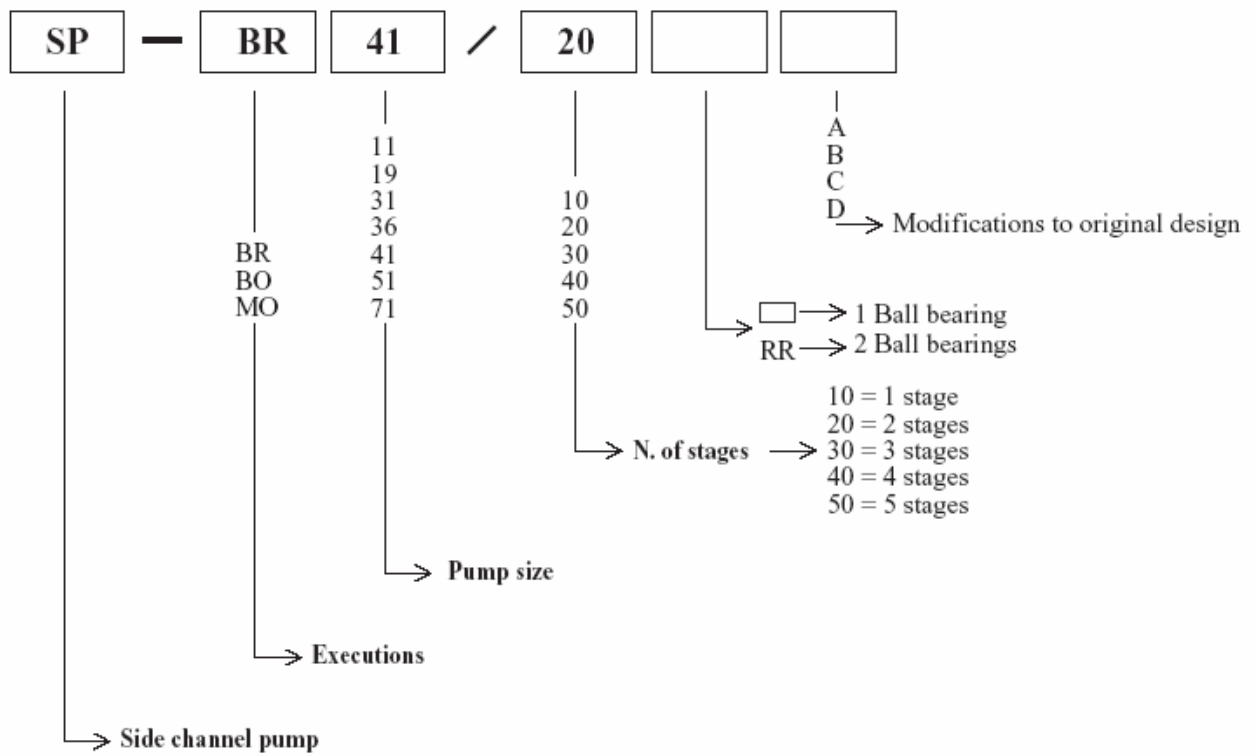


SIDE CHANNEL MULTISTAGE SELFPRIMING PUMPS SERIES SP

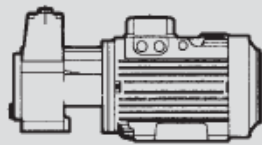




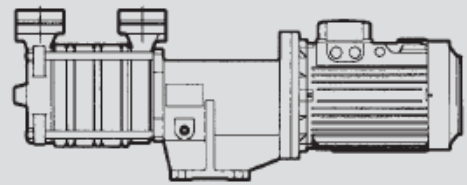
DESCRIPTION



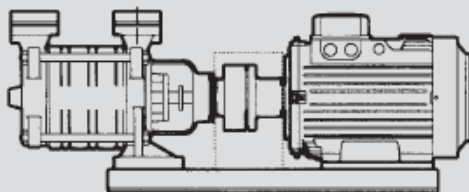
EXECUTION



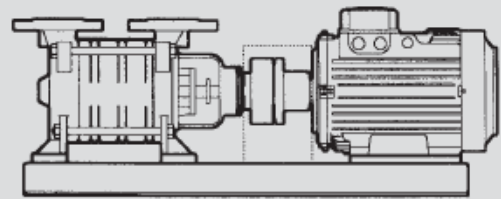
Type MA
Fig. 1



Type MO
Fig. 2



Type BO
Fig. 3



Type BR
Fig. 4

Operation and generalities

The side channel pumps, also called liquid ring pumps, are able to separate air and liquid from a emulsion. This action is achieved grace to its radial vane impellers and side channels or diffuser holes. These self priming pumps have a high priming capacity, being abele to pump liquid with high air or gas content.

As the impeller rotates between two diffusers, the discharge channel shape and location changes continuously the fluid direction, going out and back from the impeller. In this way, the fluid pressure increases, achieving high discharge pressures in comparisons with other pump designs.

The multistage design enables one or several stages assembly. The discharge pressure is directly related to the number of stages. Therefore, the side channel pumps achieve high discharge pressures at low rotating speeds and with much less stages than multistage centrifugal pumps.

Constructive features

Maximum discharge pressures

Type MO, BO: 10 bar

Type BR: 16 bar

The discharge pressure is the suction pressure plus the manometric pressure created by the pump.

Maximum temperature

Standard version: 90°C

Specially required: 130°C

Shaft seal

Standard version: Leakless mechanical seal

Specially required: Soft packing

Rotating sense view from motor

Standard version: Clockwise

Specially required: Anticlockwise

Materials

Part	A	B
Shaft	Stainless steel X5CrNiMo 18 10 (AISI 316)	Stainless steel X5CrNiMo 18 10 (AISI 316)
Impeller	Aluminum – Bronze G-CuA110Ni	Aluminum – Bronze G-CuA110Ni
Suction/discharge casings	GG25	Bronze G-CuSn5ZnPb (Rg5) G-CuSn10
Diffuser	GG25	Bronze G-CuSn7ZnPb

The pumps can also be manufactured in different materials as nodular cast iron, stainless, etc. if required.

Applications

The pumped fluid must be clean and without abrasive solid particles. The side channel self priming pumps SP series have among other the following features:

- Capacity to pump liquid with air content
- Excellent self priming capacity
- Low NPSH required
- High discharge heads with very few stages.

Therefore, these pumps cover a wide range of applications as high temperature fluids, high vapor tension liquids or volatile liquids.

For capacities up to 12 m³/h and 8 bar pressure, they are many times more economical than centrifugal pumps. Short list of application fields and services.

Industry in general

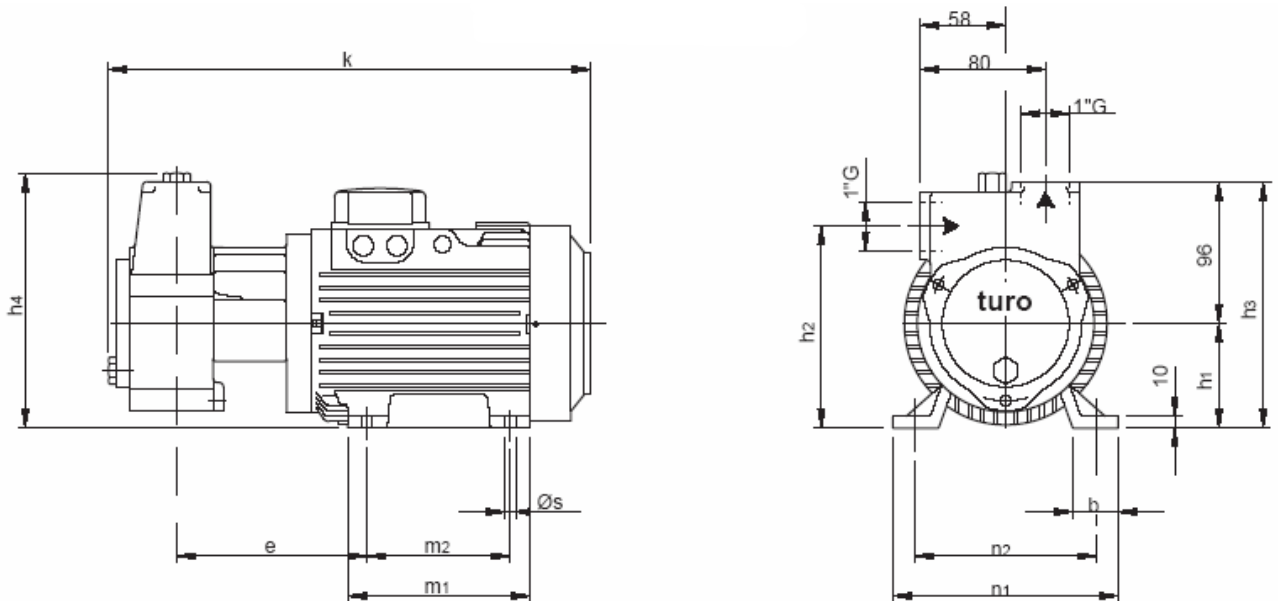
- Fuel, petrol, naphtha, kerosene, diesel-oil, pumping
- Boiler feeding
- Condensed water
- Chemical products, emulsificated fluids, etc

In general, all kind of clean liquids with difficult suction conditions.

Marine:

- Fresh water and sea water sanitary services
- Sanitary hot water circulation
- Condensed water extraction on fresh water generators

**DIMENSIONS
TYPE MA-80
ELECTROPUMP SET
2850 / 3450 R.P.M.**



Motor	h1	h2	h3	h4	m1	m2	n1	n2	b	s	e	k	kg
0.55 KW	71	137	167	173	112	90	135	112	20	7	126	340	13
0.9 KW	80	146	176	182	127	100	154	125	30	9	132	365	15

50 Hz								
Q (m ³ /h)								
0,3	0,6	0,9	1,2	1,5	1,8	2,1	2,4	3
H (m)								
46	42	38	34	30	26	22	18	10
0,55 KW 2850 rpm.								

60 Hz				
Q (m ³ /h)				
1	1,4	1,9	2,6	3,3
H (m)				
60	50	40	30	20
0,9 KW 3450 rpm.				

Subjet to alterations

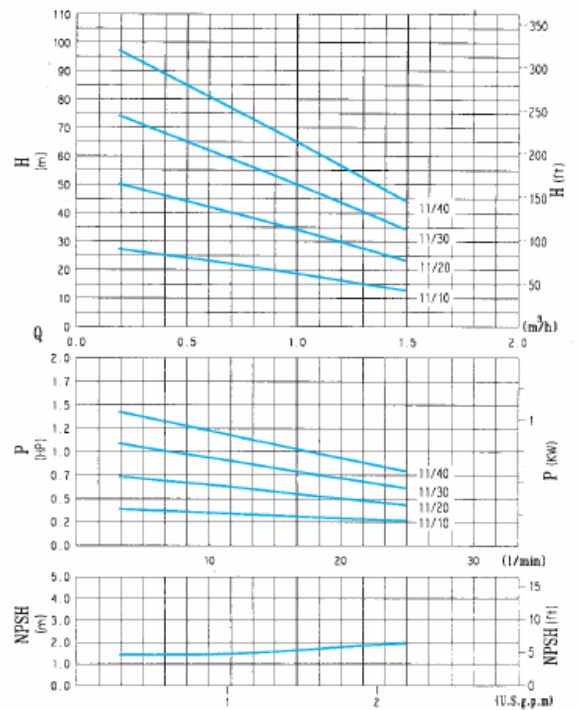
PERFORMANCE CURVES

50 Hz 1.450 $\frac{r.p.m.}{t/min.}$

Performance curves.

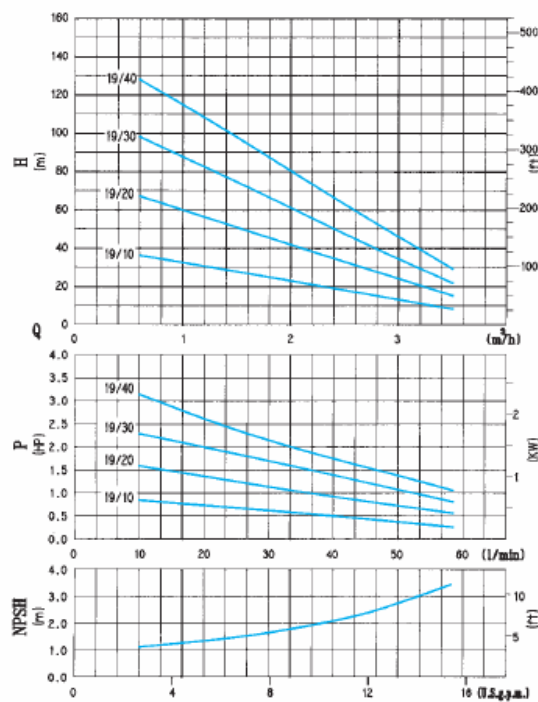
In accordance with ISO 2548 C class.

Size 11/...



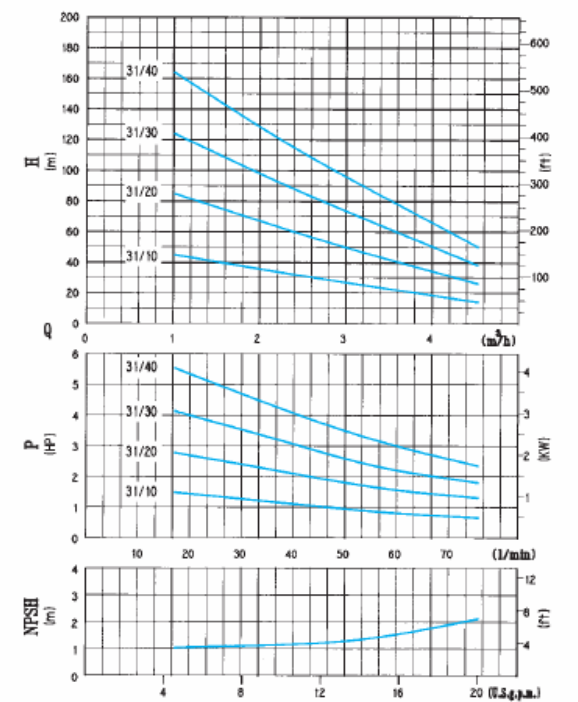
Ref.: DC-1100-1500 B

Size 19/...



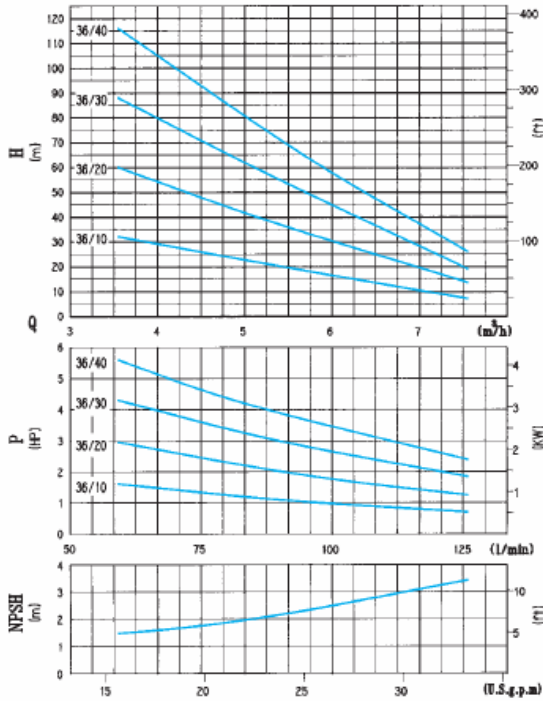
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Size 31/...



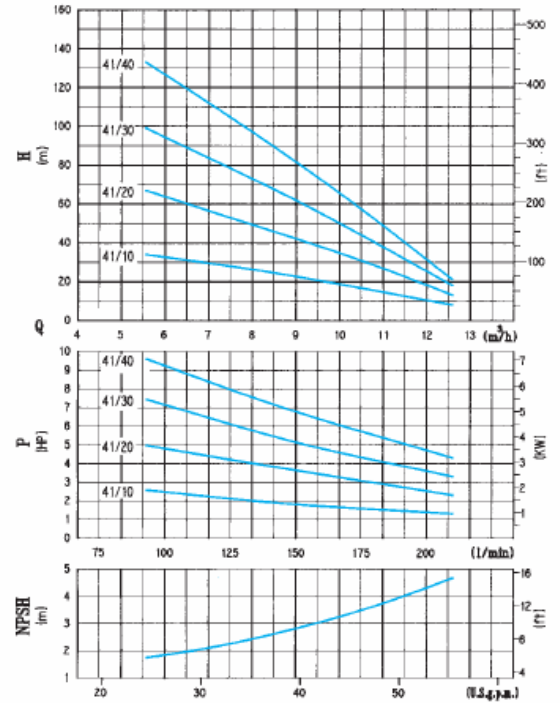
Ref.: DC-3100-1500

Size 36/...



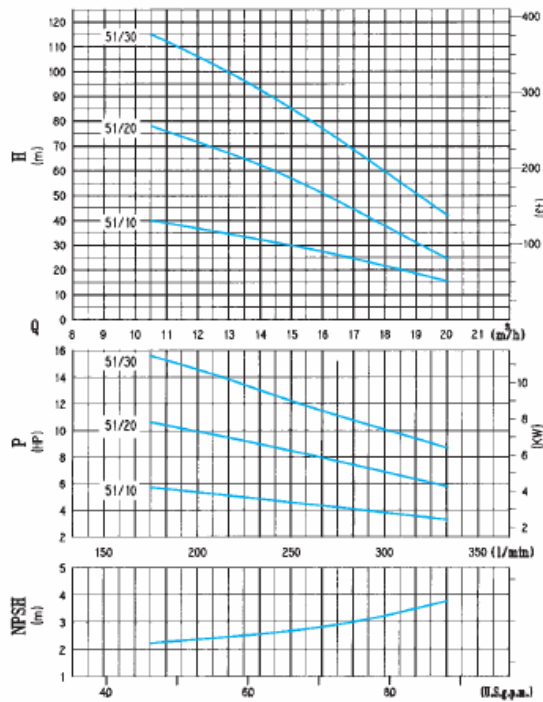
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Size 41/...



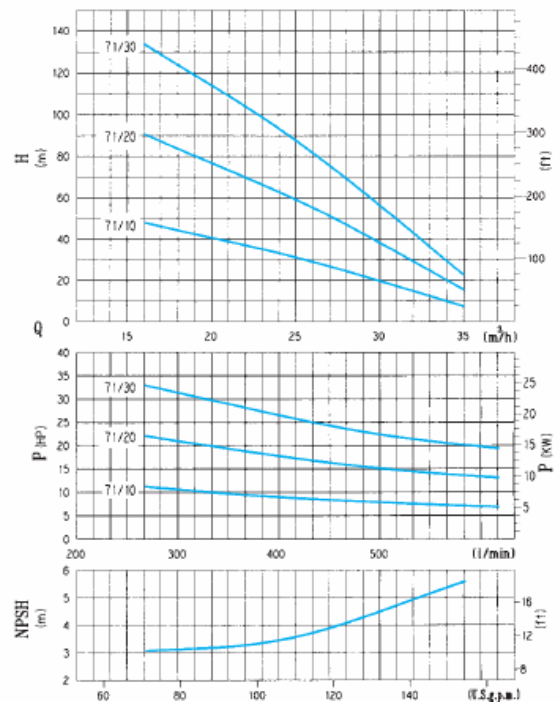
Ref.: DC-4100-1500

Size 51/...



Ref.: DC-5100-1500

Size 71/...



Ref.: DC-7100-1500

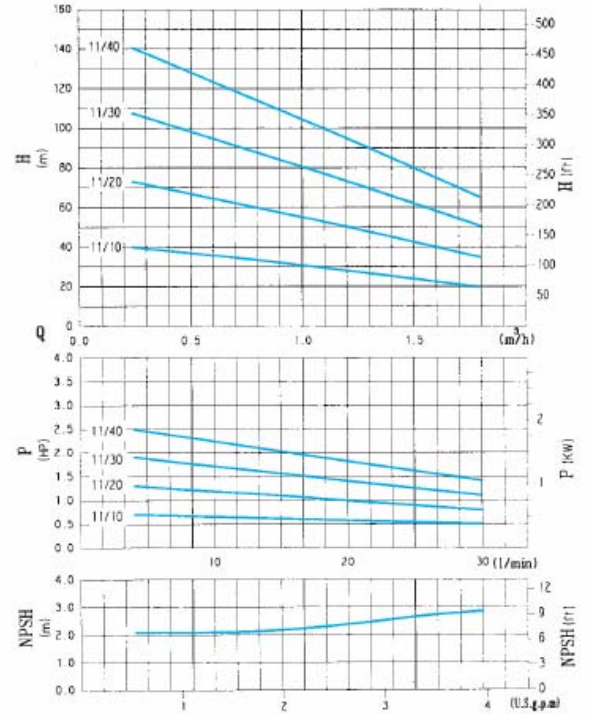
60 Hz 1.750 r.p.m.
t/min.

■ Performance curves.

In accordance with ISO 2548 C class.

Size 11/...

11/...



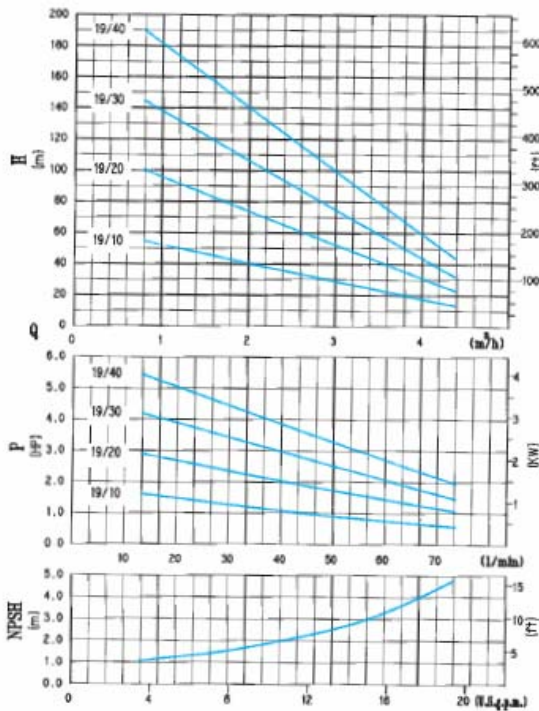
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Size 19/...

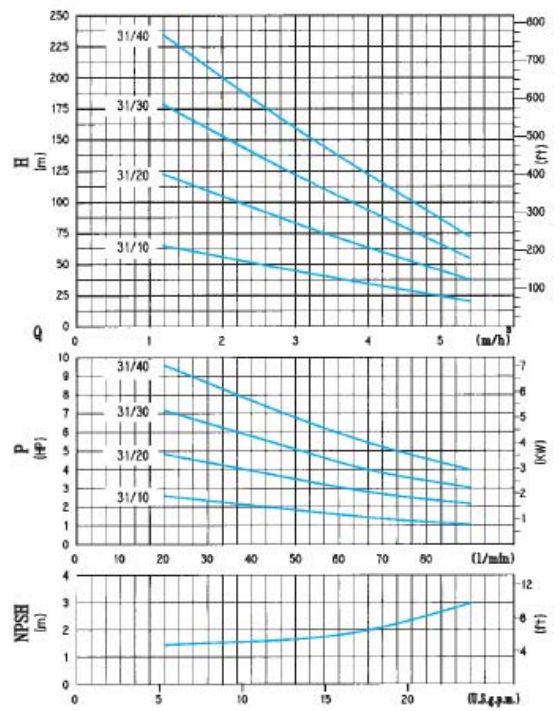
19/...

Size 31/...

31/...

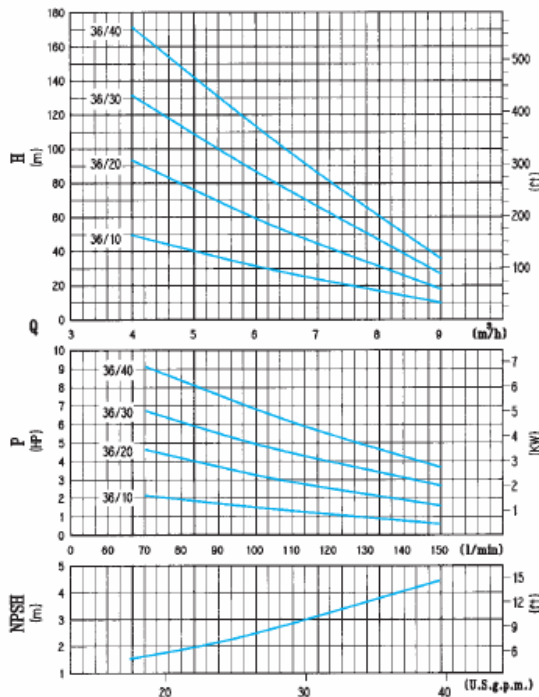


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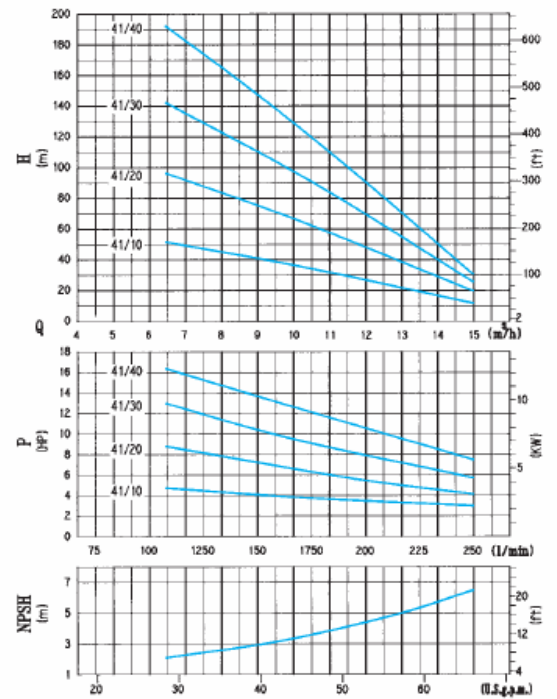
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Size 36/...



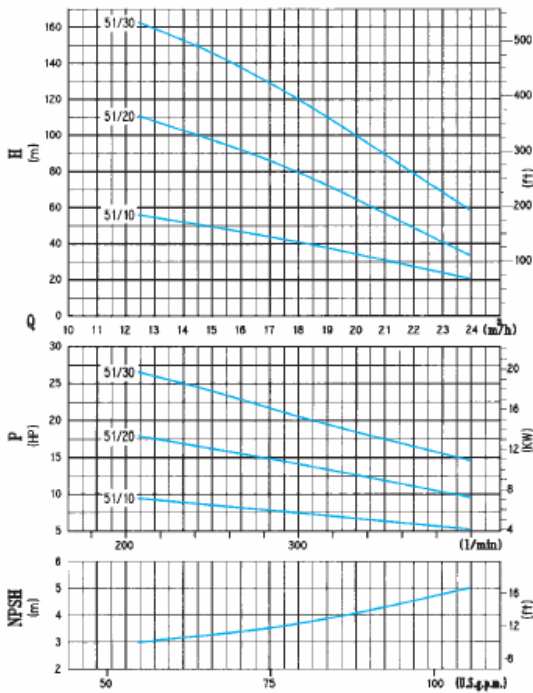
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Size 41/...



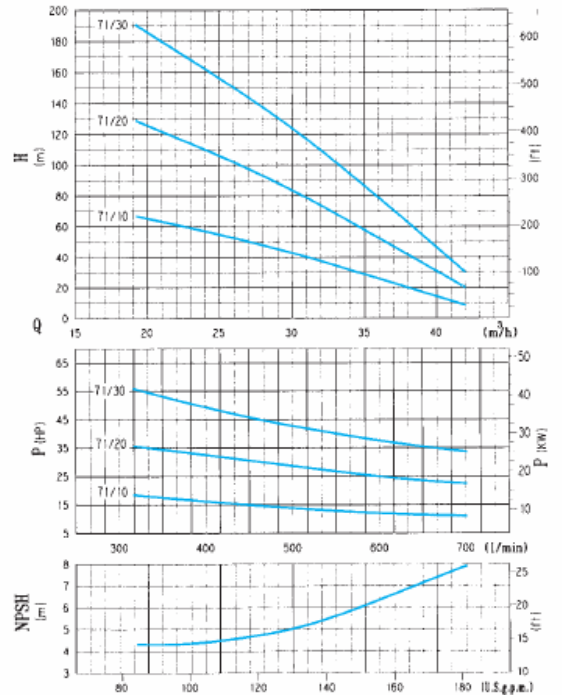
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Size 51/...



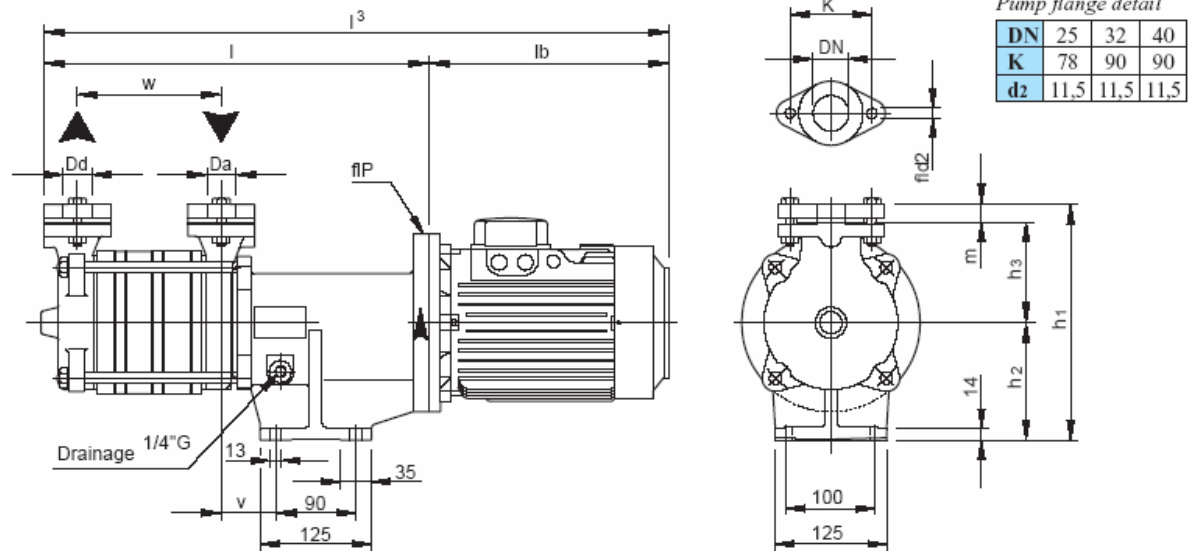
Ref.: DC-5100-1800

Size 71/...



Ref.: DC-7100-1800

**DIMENSIONS
SERIES MO
ELECTROPUMP SET
1450 / 1750 R.P.M.**



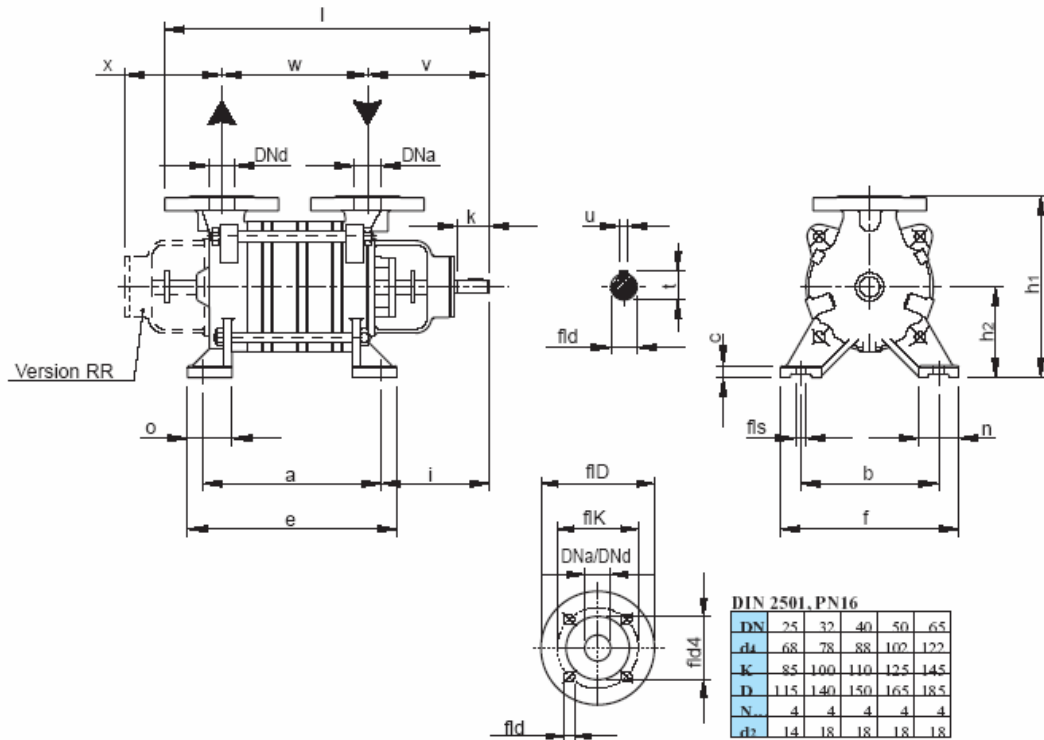
Ref. MO11-36-073

Type MO	Motor			Da	Dd	DN	h1	h2	h3	v	m	p	w	l	lb	l3	Kg	
	KW	HP	Type															
11/10	0.5	0.75	80-a	1" G	1" G	25	222	112	90	63	20	200	76	336	235	571	31	
12/10	0.75	1	80-b												235	571	32	
11/20	0.5	0.75	80-a	1" G	1" G	25	222	112	90	63	20	200	110	370	235	605	33	
	12/20	0.75	1												80-b	235	605	34
11/30	1.1	1.5	90-S	1" G	1" G	25	222	112	90	63	20	200	144	404	270	640	37	
	0.75	1	80-b												235	639	36	
	12/30	1.1	1.5												90-S	270	674	39
11/40	1.5	2	90-L	1" G	1" G	25	222	112	90	63	20	200	178	438	270	708	41	
	12/40	1.5	2												90-L	270	708	44
19/10	0.75	1	80-b	1 1/4" G	1 1/4" G	32	257	132	105	61	20	200	80	355	235	590	38	
	12/10	1.1	1.5												90-S	270	625	41
19/20	1.1	1.5	90-S	1 1/4" G	1 1/4" G	32	257	132	105	61	20	200	116	391	270	661	44	
	12/20	1.5	2												90-L	270	661	47
	12/20	2.2	3												100-L	310	701	52
19/30	1.5	2	90-L	1 1/4" G	1 1/4" G	32	257	132	105	61	20	200	152	427	270	697	50	
	12/30	2.2	3												100-L	310	737	55
19/40	3	4	100-L	1 1/4" G	1 1/4" G	32	257	132	105	61	20	200	188	463	310	737	58	
	12/40	2.2	3												100-L	310	773	58
	12/40	3	4												100-L	310	773	61
31/10	4	5.5	112-M	1 1/2" G	1 1/2" G	40	265	132	113	60	20	250	167	442	235	597	39	
	31/10	0.75	1												80-b	270	632	42
	36/10	1.1	1.5												90-S	270	632	45
31/20	1.5	2	90-L	1 1/4" G	1 1/4" G	40	265	132	113	60	20	200	87	362	270	672	48	
	36/20	2.2	3												100-L	310	712	53
	36/20	3	4												100-L	310	712	56
31/30	2.2	3	100-L	1 1/2" G	1 1/2" G	40	265	132	113	60	20	250	127	402	310	752	56	
	36/30	3	4												100-L	310	752	59
	36/30	4	5.5												112-M	310	752	62
31/40	2.2	3	100-L	1 1/2" G	1 1/2" G	40	265	132	113	60	20	250	207	482	310	792	59	
	36/40	3	4												100-L	310	792	62
	36/40	4	5.5												112-M	310	792	65

Subject to alterations

*Optional

DIMENSIONS SERIES BR BARE SHAFT ASSEMBLY

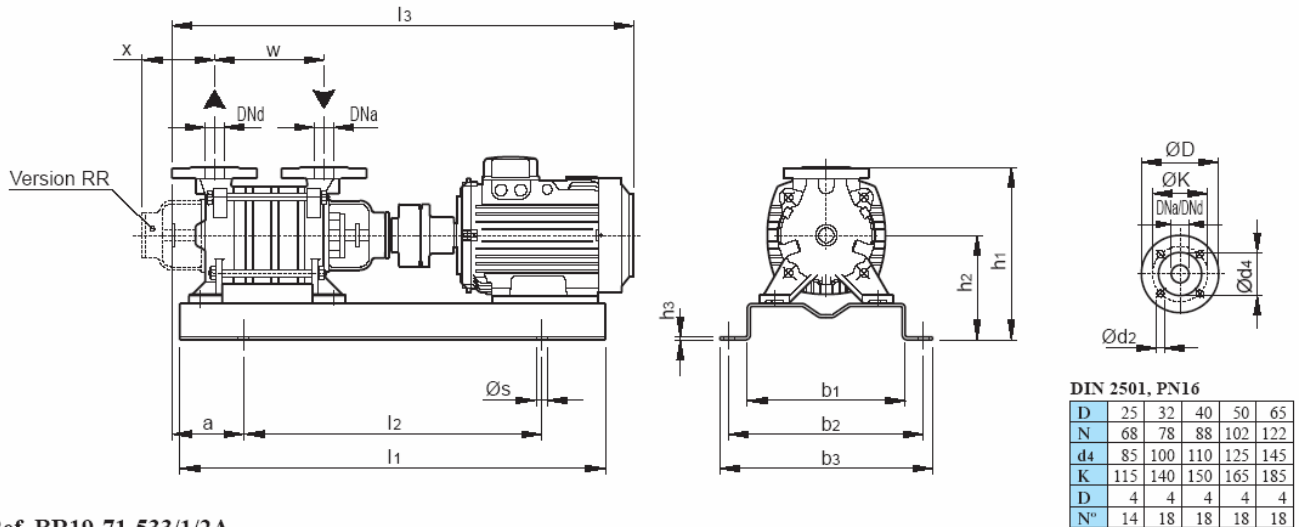


Ref. 543-BR19-71

Type	DNa	DNd	f	b	n	s	c	h1	h2	k	d	t	u	i	v	o	x	a	e	w	l	kg
19/10*	25	25	155	120	36	13	13	205	100	40	14	16,1	5	152	166	50	130	150	186	122	350	19
19/20*																		186	222	158	385	22
19/30*																		222	258	194	420	25
19/40*																						
31, 36/10	32	32	220	160	50	13	15	224	112	40	16	18,1	5	135	154	55	125	180	218	144	368	25
31, 36/20																		220	258	184	408	30
31, 36/30																		260	298	224	448	35
31, 36/40																						
41/10	40	40	220	170	50	13	20	267	132	38	19	21,5	6	195	195	55	155	154	186	147	420	35
41/20																		207	239	200	473	41
41/30																		260	292	253	526	47
41/40																		313	345	306	579	53
51/10	50	50	220	160	55	13	20	290	150	40	22	24,9	8	195	205	55	165	184	218	167	455	45
51/20																		256	290	240	528	53
51/30																		329	363	313	600	67
71/10	65	65	250	200	50	15	20	300	150	56	28	30,9	8	217	240	64	210	228	278	190	525	50
71/20																		318	368	280	615	65
71/30																		408	458	370	705	80

* Availability advised
Subject to alterations

**DIMENSIONS
SERIES BR
ELECTROPUMP
1450 / 1750 R.P.M.**



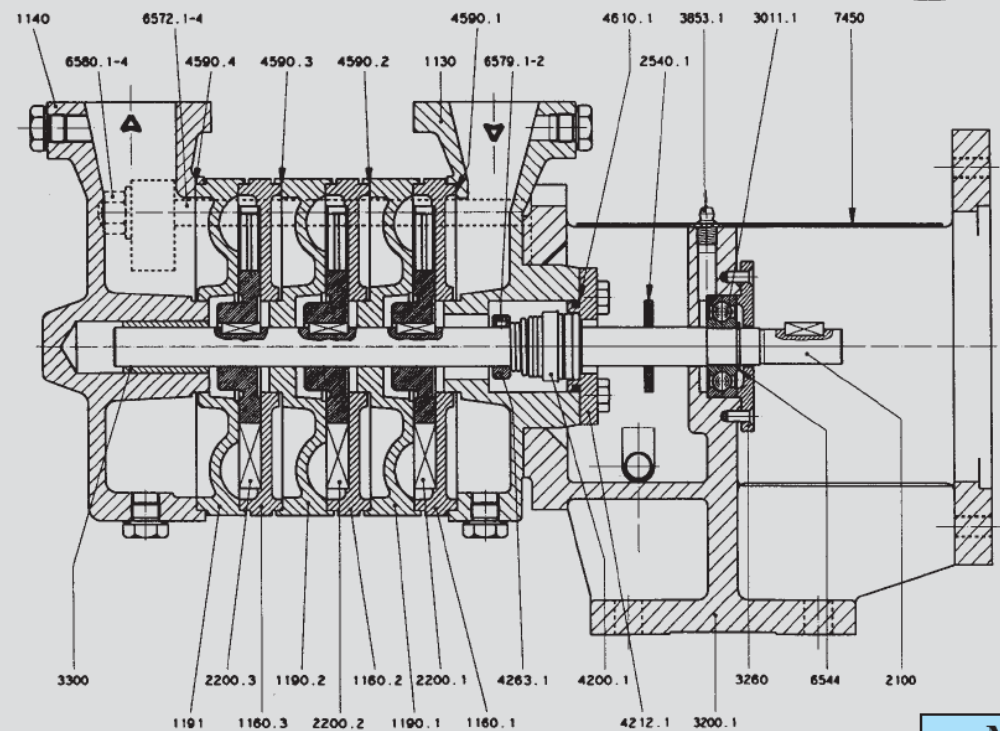
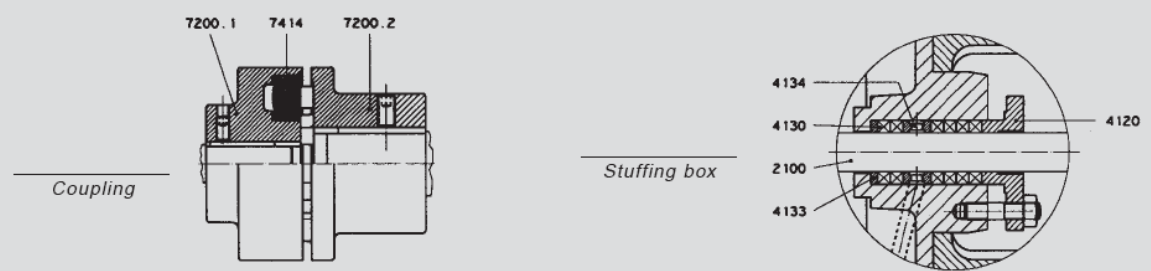
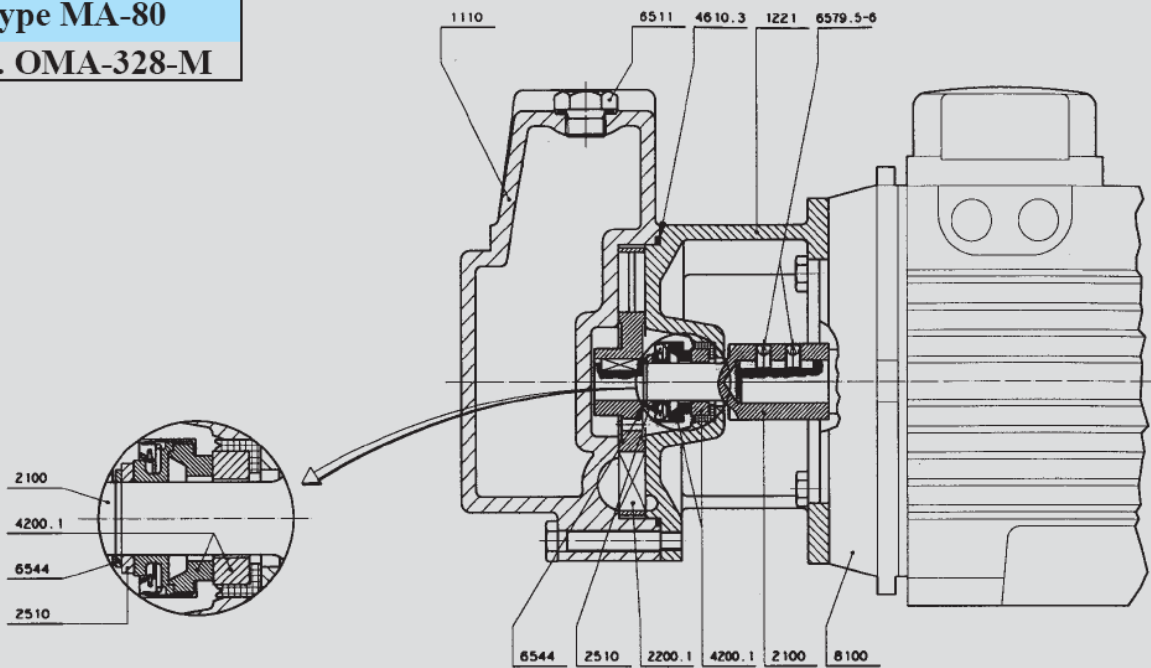
Ref. BR19-71-533/1/2A

Type	Motor			DNa	DNd	h1	h2	h3	b1	b2	b3	s	x	w	a	l1	l2	l3	Kg
	KW	HP	Type																
19/10*	0.37	0.5	71-b	25	25	245	140	7	230	270	300	18	130	122	125	600	380	610	37
	0.5	0.7	80-a															650	40
	0.75	1	80-b															650	40
0.75	1	80-b	650															40	
1.1	1.5	90-S	690															44	
1.5	2	90-L	690															47	
19/20*	1.1	1.5	90-S			265	160	7	270	320	350	18	130	158	120	700	490	720	50
	1.5	2	90-L															720	52
	2.2	3	100-L															760	57
1.1	1.5	90-S	760															53	
1.5	2	90-L	760															55	
2.2-3	3-4	100-L	800															68	
19/30*	1.1	1.5	90-S	32	32	284	172	7	270	320	350	18	125	144	130	600	380	670	45
	1.5	2	90-L															670	52
	2.2	3	100-L															710	52
1.1	1.5	90-S	710															54	
1.5	2	90-L	710															52	
2.2-3	3-4	100-L	710															54	
19/40*	1.1	1.5	90-S	40	40	327	192	7	270	320	350	18	155	200	160	700	490	815	70
	1.5	2	90-L															815	70
	2.2-3	3-4	100-L															855	80
2.2-3	3-4	100-L	875															91	
4	5.5	112-M	910															87	
4	5.5	112-M	930															96	
31, 36/10	1.1	1.5	90-S	50	50	350	210	7	270	320	350	18	165	205	800	500	600	1030	107
	1.5	2	90-L															960	100
	2.2-3	3-4	100-L															980	106
1.1	1.5	90-S	1085															117	
1.5	2	90-L	1085															127	
2.2-3	3-4	100-L	835															86	
31, 36/20	1.1	1.5	90-S	50	50	360	220	7	310	360	390	18	165	240	205	1000	690	1155	148
	1.5	2	90-L															1155	148
	2.2	3	100-L															1100	143
1.1	1.5	90-S	1230															163	
1.5	2	90-L	1275															178	
2.2-3	3-4	100-L	905															100	
31, 36/30	1.1	1.5	90-S	65	65	360	210	7	310	360	390	18	210	190	205	1000	690	935	107
	1.5	2	90-L															1010	118
	2.2	3	100-L															1010	128
1.1	1.5	90-S	1100															131	
1.5	2	90-L	1100															141	
2.2-3	3-4	100-L	1230															165	
31, 36/40	1.1	1.5	90-S	65	65	370	220	7	310	360	390	18	210	280	265	1200	700	1270	180
	1.5	2	90-L															1315	190
	2.2	3	100-L															1360	205
1.1	1.5	90-S	1435															280	
1.5	2	90-L	1435															300	
2.2-3	3-4	100-L	1435															300	

* Availability advised
Subject to alterations

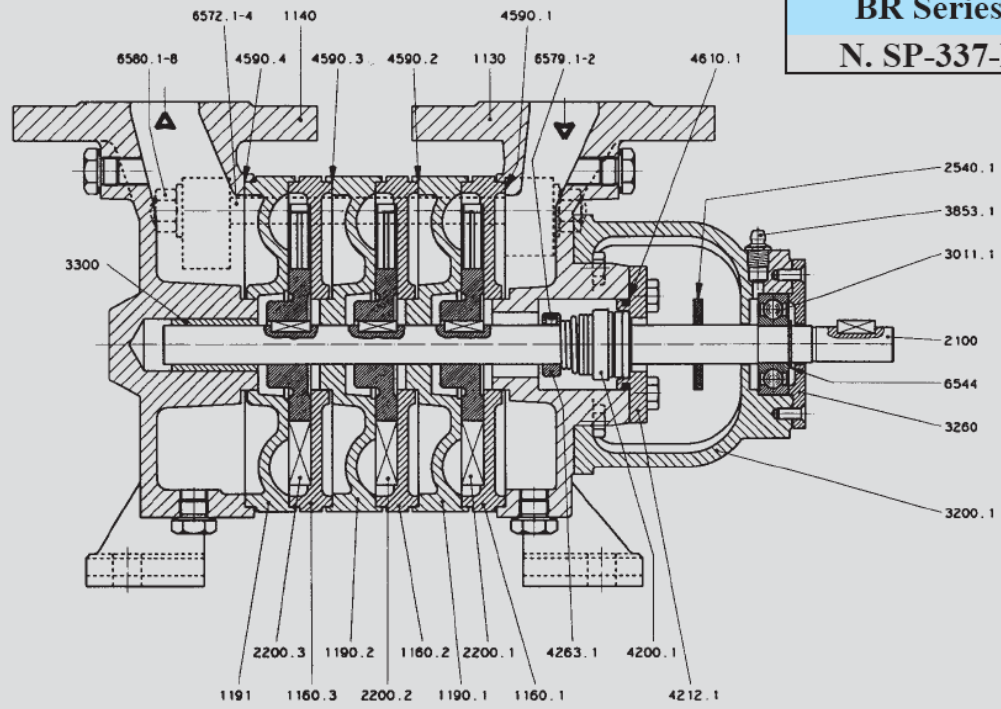
SECTIONAL DRAWING

Type MA-80
N. OMA-328-M

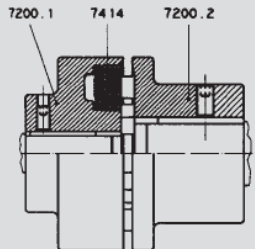


MO Series
N. SP-338-M

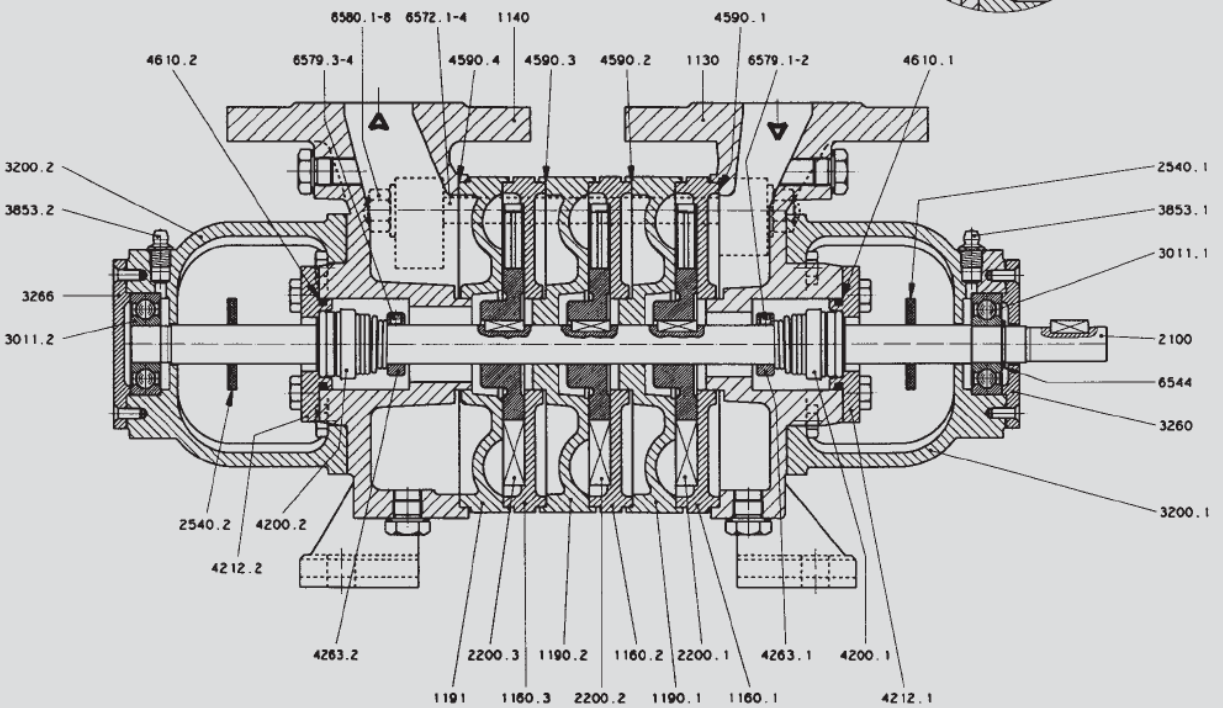
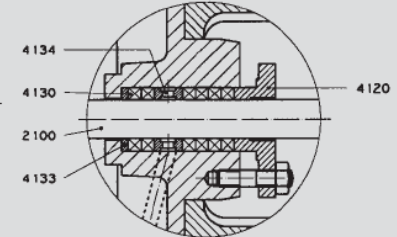
BR Series
N. SP-337-M



Coupling



Stuffing box



BO-BR...-RR Series N. SP-336-M

Description	Ref.
Pump casing	1110
Suction casing	1130
Delivery casing	1140
Suction diffuser	1160.1-3
Discharge diffuser	1190.1-2
Diffuser last stage	1191
Casing	1221
Shaft	2100
Impeller	2200.1-3
Spacer ring	2510
Thrower	2540.1-2
Radial ball bearing	3011.1-2
Bearing housing	3200.1-2
Bearing cover	3260
Bearing end cover	3266
Bearing bush	3300
Grease nipple	3853.1-2
Mechanical seal	4200.1
Mechanical seal	4200.2
Seal cover	4212.1-2
Spring plate	4263.1-2
Gasket	4590.1-4
O-ring	4610.1-2
O-ring	4610.3
Priming plug	6511
Circlip	6544
Stud	6572.1-4
Socket head cap screw	6579.1-4
Socket head cap screw	6579.5-6
Nut	6580.1-8
Coupling half	7200.1
Coupling half	7200.2
Coupling bush	7414
Coupling guard	7450
Motor	8100

Stuffing box

Stuffing box gland	4120
Gland packing	4130
Packing seating ring	4133
Lantern ring	4134



Engineered solutions for all your pumping needs

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-www.turoteknikk.com**